REMARKS/ARGUMENTS

Claims 1-50 were originally filed in the present Application. In response to a Restriction Requirement, claims 26-50 were withdrawn from consideration at this time, and are now canceled without prejudice or disclaimer, pending the filing of a Divisional Application. By a first prior Amendment, claims 1, 12-14, 19, and 22-23 were amended, and by a second prior Amendment, claims 1 and 14 were again amended. By a third prior Amendment, claims 1, 14 and 20 were amended, and claims 2, 3 and 26-50 were canceled. By the present Amendment, claims 1 and 14 are again amended, and claims 51 and 52 have been added. Accordingly, claims 1, 4-25 and 51-52 are pending in the present Application, and Applicants respectfully request reconsideration of all pending claims.

I. REJECTIONS UNDER 35 U.S.C. §102

The Examiner has rejected claims 1, 4, 7-10, 14-15, 18-20 and 25 under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 4,762,744 to Woiceshyn, *et al.* In addition, the Examiner has rejected claims 1, 4, 7-10, 14-15, 18-20 and 25 under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 4,539,254. The Applicants have amended independent claims 1 and 14 to recite that the first layer is comprised of "substantially unbound nonwoven fibers directionally aligned in the plurality of crossing linear formations."

In contrast, both Woiceshyn and O'Conner teach composite products possibly having a layer of directionally aligned fibers wherein those directionally aligned fibers are provided in a thread, yarn or roving. For example, Woiceshyn states:

> "The process of this invention further comprises combing the about over-under fabric with a high-strength open grid reienforcing fabric 5, preferably a non-woven fabric of high tenacity polyester 6 without mechanical connections at its ***yarn*** cross-over points."

(Col. 3, lns. 13-17; emphasis added.) Similarly, O'Conner states:

> "The scrim used in this invention is preferably a non-woven scrim or a weft-inserted warp knit fabric or other knit fabric, though it may also be woven. We prefer that the fiberglass ***yarns*** range from 150 1/0 (15000 yards/pound yield, 330 dtex) to 75 1/0 or heavier, up to 18 1/0 (1,800 yards/pounds yield, 2,640 dtex)."

(Col. 3, lns. 2-8; emphasis added.) O'Conner also states:

> "Thermoplastic adhesives when used on fiberglass scrim solely to bind a non-woven scrim together may range in weight preferably from 3 parts (by weight) of adhesive to 100 parts (by weight) of ***yarn*** up to 100 parts of adhesive to 100 parts of ***yarn***."

(Col. 3, lns. 14-19; emphasis added.) O'Conner further states:

> "Polyester scrim (including adhesive) may preferably range in weight between 0.25 ounces per square yard (8.5 grams per square meter) and 5 ounces per square yard (including adhesive) made of ***threads*** of 200 to 3000 denier (220 to 3300 dtex), with 500 to 2000 denier (550 dtex to 2200 dtex) being preferable and 1000 denier (1100 dtex) ***threads*** being most preferred. The weight of thermoplastic adhesive when used on polyester scrim solely to bind non-woven scrim together may range in weight preferably between 20 and 100 parts (by weight) to 100 parts (by weight) of ***yarn***, with the most preferred range being 25 to 50 parts of adhesive. When thermoplastic adhesive on a scrim is used to bind the composite together these adhesives may range between 30 and 250 parts (by weight) to 100 parts (by weight) of ***yarn***, with the most preferred range being 100 to 160 parts of adhesive."

(Col. 3, lns. 24-40; emphasis added.)

In contrast to the prior art, independent claims 1 and 14 recite that the directionally aligned nonwoven fibers used to create the first layer are substantially unbound. It is well known in the art the threads, yarns and rovings are manufactured collections of bound fibers. Fibers, whether chopped or continuous, are bound together to create a single thread, yarn or roving, which can then be used to manufacture scrims or other materials. Such is the case with Woiceshyn and O'Conner, both of which teach the use of yarns or rovings or some other type of manufactured collection of bound fibers, as shown above. As a result, these references do not teach the use of linear formation comprised of substantially unbound fibers, as is recited in amended claims 1 and 14.

The substantially unbound structure of the directionally aligned fibers comprising the claimed linear formation is clear from the description of the novel manufacturing process used to manufacture the presently claimed nonwoven material. As set forth in the application, this process includes:

> "In this exemplary embodiment, the forming protuberances 240 form grooves or channels in the forming wire 230 having a depth of about .063 inches. In the same embodiment, the forming protuberances 240 may be arranged to form grooves therebetween having a width of about .1165 inches. By employing forming protuberances 240 on the forming wire 230, as the water 250 is removed from the slurry and the fibers come to rest on the forming wire 230, initial ones of the fibers are aligned by and between the forming protuberances 240. Once these fibers are aligned, they come to rest on the flat portion of the forming wire 230 in between the forming protuberances 240, thus forming the linear formations 210 of directionally aligned fibers of the first layer 110.
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> After the spaces in between the forming protuberances 240 are filled with fibers directionally aligned to lay therebetween, the thickness of the linear formations 210 substantially equals the height of the forming protuberances 240. At this point in the manufacturing process, the remaining fibers in the slurry can no longer be aligned between the forming protuberances 240 as the water 250 continues to be removed through the forming wire 230. Thus, the remaining fibers begin to horizontally disperse randomly over both the tops of the forming protuberances 240, as well as over the linear formations 210. This random dispersion of fibers results in the second layer 120 having the randomly oriented fibers discussed above formed over the first layer 110."

(Original Application, page 7, line 12, to page 8, line 7.) As is clear from this description of the manufacturing process for the presently claimed material, the "first layer" and "second layer" of the present material are made during a single manufacturing process as the liquid is removed from the slurry containing the nonwoven fibers. Specifically, as the liquid is removed, initial ones of the fibers come to rest in the grooves defined between the protuberances, which creates the claimed "first layer." Once those grooves are filled with these initial fibers, further fibers come to rest randomly on the fibers that are laying in the grooves, which forms the "second layer." What is clear from this description is that the directionally aligned fibers that lay in the grooves to form the "linear formations" are not bound together as they would be if threads, yarns

or rovings were used as the "linear formations" to create the Applicants' first layer. This is the case since these directionally aligned fibers simple come to rest within the grooves defined by the protuberances, rather than being manufactured into yarns or rovings in an earlier manufacturing process (such as in Woiceshyn and O'Conner).

Therefore, since the substantially unbound placement of the directionally aligned nonwoven fibers is inherent as a result of the described manufacturing process, amending independent claims 1 and 14 to positively recite this feature does not add new matter to the application. Moreover, since neither Woiceshyn nor O'Conner discloses a fiber material having the claimed directionally oriented and randomly dispersed layers, including the unbound collection of directionally aligned fibers comprising the linear formations, neither of these references anticipates amended independent claims 1 and 14, or their dependent claims. Accordingly, the Applicants respectfully request that these rejections be withdrawn.

II. REJECTIONS UNDER 35 U.S.C. §103

The Examiner has also rejected dependent claims 5-6, 11-13, 16-17 and 21-24 under 35 U.S.C. §103(a) as allegedly being unpatentable over Woiceshyn. The Examiner has also rejected dependent claims 5-6, 11-13, 16-17 and 21-24 under 35 U.S.C. §103(a) as allegedly being unpatentable over O'Conner. For the reasons discussed above, neither Woiceshyn nor O'Conner teach or suggest all of the elements recited in amended independent claims 1 and 14. Specifically, both of these references teach composite materials having a layer of directionally aligned fibers wherein those directionally aligned fibers are provided in a thread, yarn or roving, rather than being substantially unbound as is recited in claims 1 and 14. Such threads, yarns or rovings are pre-made (e.g., prior to the material assembly process respectively described in Woiceshyn and O'Conner) using a collection of bound fibers, and not as recited in the present

claims. Therefore, the Applicants respectfully assert that these rejected dependent claims are not obvious in view of Woiceshyn or O'Conner since these claims respectively depend from amended independent claims 1 and 14. Accordingly, the Applicants respectfully request that the Examiner withdraw the §103(a) rejections as well.

III. CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully submit that pending claims 1, 4-25 and 51-52 are in condition for allowance, and request a Notice of Allowability for the pending claims. The Examiner is invited to contact the undersigned Attorney of Record if such would expedite the prosecution of the present Application.

Since this Amendment is in response to the pending final Office Action, the Applicants are filing herewith a Request for Continued Examination, as suggested by the Examiner. The Office is authorized to charge the necessary filing fee of $790 to Deposit Account No. 13-0480, referencing Attorney Docket No. 24170759.2. If it is determined that any additional fees are required, or an overpayment has occurred, the Office is authorized to charge the above account.

Respectfully submitted,

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